

REMARKS

Claims 4-10, 12, and 16-19 are all the claims pending in the present application, claims 1-3, 11, and 13-15 having been canceled. Claim 4 has been rewritten in independent form, and claims 5, 7-10, 12, 16, 18, and 19 have been amended to recite aspects of the disclosed embodiments with more particularity and to provide proper dependency. Support for the foregoing amendments is found throughout the present application, and specifically in the discussion at page 4. No new matter has been added.

Initial Matters

Applicants are mindful of the objection to the drawings set forth on page 2 of the outstanding Office Action. In that regard, Applicants submit concurrently herewith proposed drawing corrections--proposed FIGS. 9-11--which were previously submitted concurrently with the Amendment dated August 30, 2001. At page 2 of the Office Action mailed October 19, 2001 (paper number 8), and as reiterated in the Examiner's Answer mailed January 15, 2003 (paper number 16), the Examiner has refused entry of FIGS. 9-11. Given the disposition of this issue on appeal (*see, e.g.*, pages 4 and 5 of the Board's Decision on Appeal, paper 18), Applicants submit that entry of FIGS. 9-11 and the substitute specification submitted August 30, 2001, is proper. These papers do not introduce new matter. In addition to proposed FIGS. 9-11, a courtesy copy of the substitute specification originally submitted August 30, 2001, is submitted herewith.

Claims 6-10, 16, and 17 stand rejected under 35 U.S.C. §112, first paragraph. In that regard, the Examiner has stated that the language "at least one of the following" in claim 6 "allows more than one of the listed devices to be provided on the strap." Similarly, the Examiner has stated that the language "at least one of the following" in claim 16 "allows the strap to be formed by a material having two or more of the materials listed." Aspects of the device recited in claim 6 and the strap recited in 16 are set forth in the discussion at page 3 of the present application.

Applicants submit that claim 16 as presented in the listing of claims set forth above is allowable, and request that the rejection of claims 16 and 17 under 35 U.S.C. §112, first paragraph, be withdrawn.

With respect to claim 6, while Applicants are aware that the Board has sustained the Examiner's written description rejection (pages 6 and 7 of paper number 18), Applicants note that the functionality of the claimed device need not be related in any way to the number of components attached to the strap. In that regard, it is apparent that both the Examiner (in the outstanding Office Action) and the Board (in paper number 18) are interpreting the language "at least one of the following" in claim 6 as contemplating multiple devices. Applicants respectfully submit, however, that the Examiner's interpretation is not supported by the language of claim 5 (reciting "*a* device") and claim 6 (reciting aspects of what "*said* device comprises"). Specifically, only one device (*said* device) is recited in claims 5 and 6--what that device does, *i.e.*, how it operates, may vary to include some or all of the functionality called out in claim 6.

For example, a wristwatch may include calculator, altimeter, depth meter, pedometer, telephone, or other functionality (such as called out in claim 6) in addition to providing a display of current time. An ordinarily skilled artisan would understand that some or all of the functional aspects recited in claim 6 may be incorporated into a single device; specifically, claim 6 recites an element directed to *said* device having one or more functional attributes as would be readily understood by a person of ordinary skill in the art. Accordingly, Applicants submit that the claim is supported by the written description, and request that the rejection of claims 6-10 under 35 U.S.C. §112, first paragraph, be withdrawn.

The Prior Art Rejections

Claims 1, 3, 5, 16, 17, and 19 stand rejected under 35 U.S.C. §102(b) as anticipated by United States Patent (USP) 374,177 to Detrick. Claim 4 stands rejected under 35 U.S.C. §103(a) as unpatentable over Detrick. Claims 6-10 and 18 stand rejected under 35 U.S.C. §103(a) as unpatentable over USP 3,378,181 to Hirsch in view of Detrick. Claim 12 stands rejected under 35 U.S.C. §103(a) as unpatentable over Detrick in view of USP 5,860,198 to Buntin, Jr. (Buntin). Applicants respectfully traverse the prior art rejections as set forth below, and request reconsideration and allowance of all the pending claims in light of the following remarks.

Initially, Applicants note that claim 4 has been rewritten in independent form to incorporate all of the limitations called out in claim 1, which has been canceled. As recited in claim 4, "said protruding member is located on said strap, and said aperture for receiving said

protruding member is located on said retention loop.” Independent claims 18 and 19 recite similar language. As indicated at paragraph 8 on page 4 of the outstanding Office Action, the Detrick patent fails to teach “the protruding member being located on the strap and the aperture being located on the retention loop.”

While that Examiner has supported the obviousness rejection of claim 4 stating that “a mere reversal of the essential working parts of a device involves only routine skill in the art,” Applicants respectfully submit that the Detrick patent is more deficient than the Examiner acknowledges in that regard. Specifically, given the fair teachings of Detrick, it would not have been obvious to locate the protruding member on the strap as recited in claims 4, 18, and 19, since to do so would require substantial reworking of the strap in order to attach, fasten, or otherwise to incorporate the structure of the protruding member. In the context of Detrick’s leather strap, for example, significant retooling of the strap would be required, in addition to provision of rivets, grommets, or other fastening members integrated with the strap and accommodating a cooperating structure associated with the protruding member.

Far from involving “only routine skill,” repositioning of the complementary components of the mating structure as recited in independent claims 4, 18, and 19 is not trivial, and represents a clear departure from the scope and contemplation of the Detrick patent. The text at column 1, lines 12-25 (and elsewhere), is unequivocal: Detrick invented a “loop” designated as “A” in the drawing figures. While the inventive loop is useful in conjunction with harnesses or straps, the fair teachings of Detrick do not relate to improvements or alterations in the harness or strap itself. Detrick neither teaches nor even suggests that the inventive loop may be jettisoned in favor of a different (undisclosed) loop and a substantially modified (also undisclosed) strap.

Accordingly, Applicants submit that the Detrick patent, whether considered for its own teachings or in combination with the other cited references, is insufficient to anticipate or to render obvious independent claims 4, 18, and 19. Even when considered in combination, the references fail to teach at least “the protruding member being located on the strap and the aperture being located on the retention loop” as the Examiner has acknowledged. Further, an ordinarily skilled artisan would not have been motivated to locate the complementary

components of the mating structure as recited in the pending claims given the Detrick specification as set forth above.

The Examiner has failed to establish a *prima facie* case of obviousness at least because the cited patents, whether considered individually or in any combination, fail to teach or to suggest every element recited in the claims. Accordingly, the asserted references are not sufficient to anticipate or to render obvious claims 4, 18, and 19, and the rejections under 35 U.S.C. §§102(b) and 103(a) are improper. At least for the foregoing reasons, the claims depending from claim 4 are also allowable. Further, claims 5-10, 12, 16, and 17 recite additional features and combinations of elements, and Applicants submit that these claims are additionally allowable for their respective recitations as well.

CONCLUSION

Based at least upon the foregoing Remarks, Applicants respectfully submit that all the pending claims are allowable, and that the present application is currently in condition for allowance. The Examiner is encouraged to contact the undersigned at 858-509-4007 if it is believed that a discussion may advance the prosecution of this case.

Applicants believe that no fee is required at this time. If Applicants are mistaken in that regard, please apply any charges or credit any overpayments to Deposit Account No. 50-2212.

Respectfully submitted,

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STRAP RETENTION SYSTEM AND USES THEREFOR



FIELD OF THE INVENTION

The present invention relates to fastening devices. In particular aspect, the present invention relates to a strap retention system ideally suited for watchbands and the like.

BACKGROUND OF THE INVENTION

The wristwatch is a commonly worn article. Other wrist-born devices such as tide timers (e.g., the Nixon SUPER HERO™), altimeters, pressure gauges, pedometers, and the like are becoming increasingly popular as well. Many of these devices make use of a strap having two free ends (as opposed to, for example, a metal bracelet with a flip catch) that are secured to one another, usually by means of an adjustable mechanism such as a buckle or similar securing mechanism.

One dilemma posed by the two piece strap with adjustable securing mechanism is what to do with the free end of the strap, once the strap has been adjusted to the desired size. If simply left to hang, the free end of the strap can work loose of the buckle thereby releasing the strap. Minimally, the free end is prone to get in the way if it is not secured in some manner. This problem is frequently dealt with by including retention loops near the buckle, for receiving the free end of the strap and maintaining it in close proximity to the other end of the strap (e.g., the end that has the buckle). Unfortunately, the retention loops can slide free of the strap end which is again left to hang loose. Securing the retention loops to the portion of the strap that is not hanging free prevents them from moving, but also limits the adjustability of the strap because the loops may not function properly over the full range of the strap's adjustability.

Any type of strap that is to be secured, for whatever purpose, may also suffer from the same problems described above. Examples, such as straps to secure luggage on a car roof, or the like, provide familiar instances where such problems may be encountered.

Accordingly, there is still a need in the art for a means to further securely retain the free end of a two-ended strap that is used in conjunction with a securing mechanism.

BRIEF DESCRIPTION OF THE INVENTION

The present invention overcomes many of the problems in the art by providing a retention system for straps. Invention retention systems provide structures that are easily incorporated into straps and which prevent inadvertent loosening of the strap, as well as maintaining the otherwise free end of a fastened strap in close proximity with the remainder of the strap. This latter property of the invention system provides a safety feature by preventing loose strap ends from interfering with strap use.

BRIEF DESCRIPTION OF THE FIGURES

Figures 1-8 depict different geometric shapes useful as retention loop components of mating structures.

Figure 9 depicts a front perspective view of a strap retention system according to an embodiment of the present invention.

Figure 10 depicts a side perspective view of the strap retention system of Figure 9.

Figure 11 depicts a front perspective view of a device fastened to the strap retention system of Figure 9.

DETAILED DESCRIPTION OF THE INVENTION

In accordance with the present invention, there is provided a fastening and retention system 10 for a strap 20, said system comprising a strap 20 having at a first strap end 40, a securing mechanism 50 configured to receive a second strap end 60, and one or more retention loops 70 for maintaining, when said second strap end 60 has been secured by said securing mechanism 50, said second strap end 60 in close contact with a portion of the strap that is proximal to the first strap end 40, wherein said retention loop(s) 70 can slide along said strap 20

when the strap 20 is not secured by said securing mechanism 50, wherein one or more of said retention loops 70 comprises a first component of a mating structure 90, and said strap comprises a complementary component of the mating structure 100, and wherein said mating structure 90,100 prevents said loop(s) 70 from sliding freely along said strap 20 when the two components 90,100 are mated.

Any type of strap 20 is suitable for use in the practice of the present invention, so long as it has a securing mechanism 50 for mating opposing strap ends 40,60. As used herein, "securing mechanism 50" means any type of structure that is useful for securing one end 40 of a strap 20 to [another] a second end 60. Typically, such securing devices 50 provide for adjustment of the strap length in order to modulate the tightness of the strap 20 around the item to which it is secured. Thus, for example, a typical watchband 20 has a buckle 50 which allows for the strap 20 to be cinched to a desired tightness. As a result of securing the strap 20, there will typically be excess strap 110 at one end that would benefit from being retained to prevent inadvertent loosening, and/or to prevent the loose end of the strap from getting in the way. Any securing device 50 that, when employed, results in a loose strap end 110 can be employed in the practice of the present invention. Such structures include conventional prong-type buckles, FASTEX™ type buckles, cams, and the like.

The strap 20 may be comprised of any suitable material for the intended application, including, for example, fabric, leather, metal (optionally with links, as required for flexibility), polymer (e.g., polyurethane, polyurethane/silicon blend, nylon, polyvinyl chloride (PVC), or the like), leather, and the like.

In one embodiment, the strap is configured to receive thereon a device 120 (see Fig. 11). For example, a plain strap can have attachment points, such as loops, or the like, for fastening a device 120 to the strap. In another embodiment, the strap is a two piece strap 20, such as a watchband 20, that, upon attachment of the two pieces to a device 120, such as a watch, essentially becomes a single strap 20 having two ends 40,60. Devices that are typically mounted on a strap include a wristwatch, an altimeter, a depth meter, a pedometer, a pager, a telephone, a personal data device, a tide meter, and the like. Literally any device that can be attached to a strap is contemplated for use in the practice of the present invention.

As used herein, "retention loop 70" means a structure that surrounds or is attached to the strap 20 and which operates to hold one end 40 of the strap 20 in close proximity to the other end 60 of the strap 20, when the strap 20 has been secured by the securing mechanism 50. Again, referring to a watch band 20 as an example, retention loops 70 can be adjusted, typically by sliding them along the strap 20, in order to accommodate a range of lengths of excess strap material 110. Unfortunately, the adjustable nature of retention loops 70 prevents them from securely retaining the excess strap material 110. For example, if the loop 70 slides off of the end of the excess strap material 110, the excess 110 hangs free. A similar state results if the loop 70 slides in the direction of the securing mechanism 50 (e.g., buckle) to such an extent that the excess strap material 110 extends past the retention loop 70 far enough to again hang free. Thus, the present invention provides for both the strap 20 and the retention loop 70 to have a component of a mating structure 90,100 for securing the retention loop 70 to the excess strap material 110, thereby preventing the loop 70 from sliding off of the strap 20.

As used herein, "mating structures 90,100" means any structure that will provide for the temporary attachment of excess strap material 110 to the retention loop 70. Accordingly, the structure 90,100 will have a first component 90 and a complementary component 100 that mates with the first component 90. The relative location of the first and complementary components 90,100 is not important. Thus, either of the components 90,100 can be located on the strap 20, with the other component 90,100 being located on the loop 70.

In one embodiment of the present invention, the mating structure 90,100 comprises a protruding member 100 and a slot 90 or recessed area for receiving the protruding member [same]. The mating of the member-slot structure 90,100 can merely comprise fitting the member 100 into the slot 90, or it can comprise a more positive lock. Positive locking between the member 100 and the slot 90 can be accomplished by providing for a snug fit of the member 100 into the slot 90 or the inclusion of a catch, such as additional mating structure inside or in the proximity of the slot 90, and corresponding additional mating structure on or in the proximity of the member 100, or the like, wherein the catch is engaged by the application of pressure, or the like. Other types of mating structures can clearly be employed in the practice of the present invention, and are contemplated as within the scope of the present invention. Examples of such mating structures include hook and loop fasteners, and the like. Additional examples of

structures which can be employed as the retention loop component of the mating structures include those depicted in Figures 1-8, and the like.

While the invention has been described in detail with reference to certain preferred embodiments thereof, it will be understood that modifications and variations are within the spirit and scope of that which is described and claimed.

ABSTRACT

In accordance with the present invention, there are provided fastening systems for straps. Invention fastening systems provide for the secure fastening of straps which employ a securing device such as a buckle, by providing anchor points to retain strap ends. In this manner, free-hanging strap ends are prevented, thus providing a secure, hassle-free system for retaining devices such as wristwatches, and the like.